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IN THE
Supreme Court of the United States

OCTOBER TERM, 1976

No. 76-1575

CONTROL DATA CORPORATION, *Petitioner*

v.

TECHNITROL, INC., *Respondent*

**SUPPLEMENTAL APPENDIX TO
PETITION FOR WRIT OF CERTIORARI TO THE
COURT OF APPEALS FOR THE FOURTH CIRCUIT**

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UNITED STATES COURT OF APPEALS FOR THE FOURTH CIRCUIT

No. 75-1857

TECHNITROL, INC., *Appellant*

v.

CONTROL DATA CORPORATION, *Appellee*

**Appeal from the United States District Court
for the District of Maryland, at Baltimore.
R. Dorsey Watkins, District Judge.**

Argued February 4, 1976

Decided March 8, 1977.

Before WINTER, RUSSELL, and WIDENER, *Circuit Judges*.

S. C. Yuter (Yuter and Rosen on brief) for Appellant;
Allen Kirkpatrick (Kevin E. Joyce, Larry S. Nixon, Cush-
man, Darby & Cushman, and Joseph A. Genovese, Control
Data Corporation on brief) for Appellee.

WIDENER, *Circuit Judge*:

This patent case concerns an automatic reset feature, a device to prevent information loss in a magnetic data storage system. Technitrol, Inc., the patent owner, brought an infringement suit for an injunction and damages against Control Data Corp., a manufacturer, seller, and user of such systems. Control Data filed a counterclaim asking

the court to declare Technitrol's patent invalid and moved for summary judgment for failing to comply with 35 USC § 112, para. 2, which reads in pertinent part:

"The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention"

Looking to an affidavit by an expert filed by Control Data, the record of an allied case in the Court of Claims, and the language of the patent itself, the district court held claims 1-15 and 17-24 invalid as not "particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention," 394 F.Supp. at 520, relying on paragraph 2 of § 112 and rejecting the defendant's position that the claims are adequate under paragraph 3 of § 112. *Sua sponte*, the court also granted summary judgment for the defendant on the remaining claim 16 based largely on its holding as to the other claims. Technitrol now appeals.

We are of opinion that the claims adequately describe the invention as we consider them here. We therefore vacate the district court's grant of summary judgment and remand for further proceedings.

I

Technitrol's patent was originally issued to T. K. Sharpless and E. S. Eichert in 1952 as No. 2,611,813. By assignment, Technitrol is, and at all pertinent times has been, the owner of the patent.

The patent describes a computer system used, for example, in making airline reservations, composed of a central storage unit where information about various flights is stored, and a number of remote stations, such as airport reservations desks, which communicate electrically with the central unit. An operator, by punching certain

keys on the keyboard at the remote station, can ask the central storage unit whether seats are available on a particular flight. If seats are available, the invention can make reservations on flights, or it can cancel them, or it will indicate if a flight is full.

The remote stations communicate with the central storage unit through electrical transmission lines. Each remote station has keyboards by which an operator can designate a particular flight about which he desires information and the number of seat reservations needed.

The keys, through appropriate circuitry, indicate to the central station the register which contains information about the desired flight. After setting the keyboard, the operator presses a start switch which operates a selector circuit to insure that only one keyboard at a time can communicate with the central station. This avoids the possibility of simultaneous duplicate requests to a register from more than one remote station.

To make reservations, the operator communicates the number and flight to the central storage unit. There, the total number of seats and confirmed reservations of each particular flight is stored on a corresponding register. When the operator selects the appropriate flight number, the machine selects the corresponding register and adds the number of reservations desired to the previous total. If the sum of these is less than the total of reservations available, the reservation request is confirmed, the number of reservations requested is added to the previous total, and the new total is recorded in the storage register where it is available for similar access in the future. But if the sum exceeds the total of reservations available, the application is rejected, the inquirer is so notified, and the old number remains unchanged.

The central storage unit is a magnetic memory device consisting of several continuously revolving magnetic disks

(information disks 2, 3, 4, 5)¹ mounted on a common rotating shaft. An electric motor drives the shaft. Information is stored on the disks in magnetic pulses, which, when arranged in groups around the disk, are called registers, one group being one register. Each register contains information about a particular airline flight such as the number of seats already reserved and the number still available.

Magnetic recording heads (C, D, E, F) are mounted adjacent to the disks. These either read what is on the disk, add to it, or erase from it. Thus, as the disks rotate on the shaft, the recording heads, through appropriate circuitry, can read or erase the magnetic pulses already recorded, or can place new pulses on the disks.

Also located on the common shaft with the information disks is a master clock disk (1). Around the clock disk, two channels of magnetic pulses are recorded. One channel has 160 evenly-spaced pulses; the other, one pulse. Magnetic pickup heads (A, B) are located over each channel. The 160-pulse head is connected to a scale-of-ten counter (b) which divides the information from the disk into sixteen 10-pulse registers. Pulses from the scale-of-ten counter, when applied to a binary counter device (c), produce 16 unique voltage combinations, each one of which corresponds to one of the registers on the information disk. The unique voltage combinations (originating at the various registers) are successively fed into a coincidence circuit (d).

When the remote station operator pushes the key to select a particular register, the key generates a voltage combination corresponding to one of the unique voltage combinations originating on the rotating disk which is also fed into the coincidence circuit (V_1, V_2, V_3, V_4). When the disk rotates to the particular register so that its voltage

¹ Fig. 4 appended hereto is used for numbered or lettered references.

combination matches the one generated by the operator, the coincidence circuit detects the coincidence and produces an output activating the magnetic recording heads (C, D, E, F) which read, write, or erase.

There is general agreement here (not later binding) that a previous magnetic storage system or systems accurately located the registers as long as operation continued without interruption. When interrupted, however, as by a power failure or merely cutting the control station off, position volatility occurred and the information was lost. In essence, this means that the clock disk and the counters, normally in synchronization, lose synchronization when power is cut off. This happens because the counters, electronic devices, stop operating when power stops; and because of rotational inertia, the disks, being mechanical devices, may rotate slightly after the power is cut off, and thus may move out of synchronization with the counter. On restart, the counters, which have lost count of the physical location of the registers, do not pick up the count where they left off with the corresponding register. On start-up, therefore, it is essential that the counters be reset to synchronize them with the registers.²

The Sharpless-Eichert invention does this by the one-pulse-per-revolution channel on the clock disk. The single pulse resets the counters to zero, whether after each revolution of the clock disk or only on start-up is not material here. Even if the power goes off momentarily, causing the counters to start up with arbitrary counts, within one revolution the invention will synchronize the counters to the correct count.

In order to simplify this appeal, Technitrol has limited its argument to representative claim 19.² It takes the posi-

² 19. In an information storage system, magnetic recording means having a plurality of information recording sections constituting registers and also having a register-selection section on which are recorded pulses coordinated with said registers, means for pro-

tion that the reset feature appears there. Because we think it is for the purpose of this motion, we do not address the arguments regarding the other patent claims. Although Control Data apparently takes the position that claim 19 is not representative, it fails to state why, only offering the conclusion. Since the case will be remanded for further proceedings, the district court may take appropriate action to any extent it may properly determine that a claim is not representative when considered in the light of this opinion.

We emphasize that the case comes to us as an appeal from the grant of summary judgment holding the patent claims invalid. While summary judgment may be proper in patent infringement cases, it is only where, under FRCP 56(e), there is no genuine issue as to any material fact and the moving party is entitled to a judgment as a matter of law. *Smith v. General Foundry Machine Co.*, 174 F2 147, 151 (4th Cir. 1949), cert. den. 338 US 869 (1949). It should be employed with great caution, *Morpul, Inc. v. Glen Raven*, 357 F2 732 (4th Cir. 1966), and is not ordinarily appropriate for the disposition of a patent case. *Long v. Arkansas Foundry Co.*, 247 F2 366 (8th Cir. 1957). As the moving party, Control Data has the burden of showing the absence of a genuine issue of material fact. *Adickes v. Kress & Co.*, 398 US 144, 157 (1969).

In support of its motion, Control Data submitted an expert's affidavit which concluded that the claims did not

ducing from said recorded pulses different successively-occurring register-selection voltage combinations representative respectively of said registers, means under control of an operator at a remote position for producing a group of pulses indicative of a particular register and also containing numerical information which it is desired to store in that register, means responsive to some of said pulses for producing a pattern of voltages, means responsive co-incidentally to said voltage and said voltage pattern for selecting said register, and means for storing said numerical information in said register.

adequately describe the automatic reset feature. The district court referred to the affidavit as uncontroverted. But in our opinion it was not, and in all events had to be construed in the light most favorable to the plaintiff. *Adickes*, p. 157. The court also had before it the report of a Court of Claims Commissioner,³ the opinion of the Court of

³ The suit in the Court of Claims included an issue arising because Sharpless and Eichert, the inventors of the automatic reset feature, had been employed by the University of Pennsylvania under a U. S. Navy contract to do research on the ENIAC and EDVAC government contracts. Under this contract, research associates were to grant to the United States a royalty-free right and license to all discoveries and inventions growing out of the research. When the government manufactured and used the inventions of the Sharpless-Eichert patent, Technitrol brought suit in the Court of Claims to recover compensation for the unauthorized use.

The commissioner recommended to the court that it find the government not licensed under the patent, but the court did not wholly adopt his recommendations. It found, instead, that the government was licensed "except to the extent that those other claims may be limited to the system's automatic reset feature." *Technitrol, Inc. v. United States*, 440 F2 1362, 1364 (Ct. Cl. 1971). That decision rested on the fact that the reset feature was the only portion of the patent disclosure invented after the inventors left the employ of the government's contractor.

But the court declined to pass on the question of whether that feature was adequately described in the claims, stating:

... In determining validity, as the *Dominion* case [*Dominion Magnesium Ltd. v. United States*, 320 F2 388 (Ct. Cl. 1963)] and many others illustrate, courts must frequently choose between a narrow construction of the claims that upholds the patent and a broad construction that strikes it down. We do not wish to make that choice at this stage, believing that it would be both unwise for the court and unfair to the parties to affix a meaning to the claims in the absence of further proceedings, including the making of a record, on validity. 440 F2 at 1369.

Control Data urges us to disregard the findings of the commissioner who had construed representative claims, including claim 19, so as to include the reset feature, because his report was not followed by the Court of Claims. While it is true that the court

Claims, and the record in the Court of Claims which included expert testimony. We note the district court in its opinion referred to all of this additional information.

It seems to us that what the district judge did was to adopt the opinion of the expert for Control Data and to disregard the testimony and other proof favoring Technitrol. Since letters patent are contracts, they should be construed with the interest of the parties in mind to give effect to their legitimate expectations. *Del Francia v. Stanthony Corp.*, 278 F2 745, 747 (9th Cir. 1960). And, while matters of construction are ordinarily for the court, "[t]he claim of a patent must always be explained by and read in connection with the specifications." *American Fruit Growers, Inc. v. Brogdex Co.*, 283 US 1, 6 (1931). Although in a simple and clear-cut case, it may be proper to disregard one party's evidence, see *Ethyl v. Borden, Inc.*, 427 F2 206, 208 (3rd Cir. 1970), where there is conflicting evidence before the court, as here, disposing of the issue on motion for summary judgment is not proper.

It may well be, as Technitrol argues and as the commissioner found in his report to the Court of Claims, that the term "representative" in clause 2 of claim 19 points out the automatic reset feature. Shaw's testimony before the commissioner can be construed that way when read in the light of the rules of construction we have recited just above. And, perhaps the patentees could have been more thorough in their patent claims. One part of the opinion of the district court suggests this may have been their only error. p. 517. Nevertheless, they have "the right to

did not wholly follow his recommendations, it decided the case on other grounds and specifically did not decide the issue of whether the automatic reset feature was included in the claims of the patent as just above stated. We neither accept nor reject finally the commissioner's construction of claims although his reasoning is persuasive.

The opinion of the district court is reported at 394 F.Supp. 511 (D. Md. 1975), and the report of the commissioner in the Court of Claims at 164 U.S.P.Q. 51 (Ct. Cl. Commr. 1969).

use such words as to [them] best describe [their] intention, and they will be so construed as to effectuate that result." *Bianchi v. Barili*, 168 F2 793 (9th Cir. 1948) (quoting *H. J. Wheeler Salvage Co. v. Rinelli & Guardino*, 295 F.Supp. 717, 727 (D.C. N.Y. 1924)). The rule is that patentees are allowed much latitude in terminology, and their language will be accorded the meaning intended if it can be ascertained from the context. *Strong-Scott Mfg. Co. v. Weller*, 112 F2 389 (8th Cir. 1940) (citing *Smith v. Goodyear Dental Vulcanite Co.*, 93 US 486, 494-95 (1876)). See *Topliff v. Topliff*, 145 US 156, 171 (1892).

Everyone admits that without the reset feature the system was position volatile. And the record supports the conclusion that Sharpless and Eichert intended their system to be one unhampered by position volatility. To be so, it was essential that the disks and the counters stay in synchronization. Otherwise, the counters might not produce signals representative of each register on restart.

The grant of a patent is some evidence that the patented device is operative. *Dashiell v. Grosvenor*, 162 US 425, 432 (1895). To be patentable, the device must be useful. 35 U.S.C. § 101. Certainly it would have to work in order to be useful. *Brenton v. Mishcon*, 93 F2 445, 448 (2d Cir. 1937).

Without the automatic reset feature to insure that the counters produce signals representative of each register, whether or not following a loss of power, the Sharpless-Eichert patented invention would not work as intended. We are of opinion that the claims at issue should not be construed so rigidly as to defeat the utility of the device as the inventors intended it. We think the use of the term "representative" without qualification could easily have meant that the signals would always represent the proper register. That is how their system worked, and based on this record, that is what we think they intended to claim.⁴

⁴ Technitrol takes the position clauses 1 and 2 of claim 19 disclose the reset feature.

In any event, it is an established principle of patent law that when a claim is fairly susceptible of two constructions, one will be adopted which will preserve to the patentee his actual invention. *Coupe v. Royer*, 155 US 565, 577 (1894). In this case, at least two electronic experts who gave opinions did not agree on the effect of the inventor's claim descriptions. We think, for the purpose of summary judgment, that this indicates at the least the claim may be susceptible of two constructions.

We are supported in our conclusion by the third paragraph of 35 USC § 112, which is:

"An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claims shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof."⁵

⁵ The third paragraph of § 112 was added in 1952. There seems to be general agreement that it was intended to ameliorate the effect of *Halliburton Co. v. Walker*, 329 U.S. 1 (1946), and to restore the authority of *Continental Paper Bag Company v. Eastern Paper Bag Company*, 210 U.S. 405 (1908). *Halliburton* and *Continental* narrowed and broadened, respectively, functional claiming. The following articles to some extent or other address the addition, and we have considered them in the preparation of this opinion. Smith, *Functional Claims and the Patent Act of 1952*, Journal of the Patent Office Society, July 1966, Vol. XKVIII, No. 7; from the same Journal, Vol. XXXVII, Oct. 1955, No. 10, Riesenfeld, *The New American Patent Act in the Light of Comparative Law, Part II*; Wachsner, *Commentaria, Functional Claims*.

The case before us has been commented upon in *Patent Law Perspectives*, 1969-70 Annual Review, § E.1; and in 1975 Developments, § A.5. The editors, in general, would seem to be in agreement with our conclusion.

We begin with the proposition that the claims measure the invention. *Continental Paper Bag Company v. Eastern Paper Bag Company*, 210 U.S. 405, 419 (1908). (*Continental Paper Bag* is referred to also in footnote 5).

Remembering that the district court held against the patent in question because in its opinion the claims did not particularly point out and distinctly claim the subject matter which the applicant regarded as his invention, 35 USC § 112, paragraph 2, we also are of opinion that a valid rule of construction with respect to paragraph 2 is correctly expressed in *Application of Lundberg*, 244 F2d 543 (C.C.P.A. 1957), that the requirements of the second paragraph of § 112 just above mentioned are not diminished by the addition of the third paragraph, also above mentioned.

We think a correct construction of the third paragraph of § 112 has been stated in *Application of Knowlton*, 481 F2d 1357 (C.C.P.A. 1973). There, the paragraph was described as dealing with *permissible* forms of claiming (italics from *Knowlton*), and, after reciting some of the language from the statute, the court stated the rule adopted was that "If the applicant chooses to use such language, the statute instructs the interpreter of the claims, e.g., the Patent Office or the courts, as to how such language shall be interpreted." p. 1366. Thus, the third paragraph is held to deal with permissive claiming; and, if language coming within the statute is used in the claim, directs how the courts shall construe that language. *Knowlton* also acknowledges that it does not dispense with the definiteness requirement found in the second paragraph of § 112, as we have just above recited from *Lundberg*.

We also think a correct construction of the third paragraph of § 112 is found in *Stearns v. Tinker & Rasor*, 252 F2d 589 (9th Cir. 1957), in which the court stated: "We construe the section to mean that while an element in a claim for a combination may be expressed as a means or

step for performing a function without recital of structure, material, or acts in support thereof; the structure, material, or acts must be described in the specification, and if so described, the claim will be construed to cover that which is described and the equivalents thereof. But the structure need not as well be recited in the claim." p. 597-598.

In the use of means clauses in patent claims, a "means for" clause such as those used here "... in effect calls for structure—more precisely—for apparatus or, indeed, for any physical body or bodies having the capacity to perform the function recited after the words 'means for'. Such a clause is completely devoid of the details of apparatus capable of satisfying the recitation of function. Indeed, a 'means clause' (consisting of the words *means for* and a statement of the function which such means is supposed to perform) is to be construed as calling for ANY means capable of performing the indicated function." Rosenberg, *Patent Law Fundamentals* (1975), p. 48.⁶

With these principles in mind, we turn to the question at hand. Technitrol claims the reset feature is disclosed in clauses 1 and 2 of claim 19, which are:

"Claim 19 [repeated for convenience]

"In an information storage system,

"1. magnetic recording means having a plurality of information recording sections constituting registers and also having a register-selection section on which are recorded pulses coordinated with said registers,

⁶ We are aware that means and function claiming results in quite broad claims which are to greater or lesser extent limited by the specifications. We do not have before us at this time the question of the extent to which the claims here should be limited. See Deller's *Walker on Patents*, 2nd ed., e.g. §§ 248 and 255.

"2. means for producing from said recorded pulses different successively-occurring register-selection voltage combinations representative respectively of said registers,"

We are unable to ascertain precisely why the district court held that there was insufficient disclosure under paragraph 2 of § 112. It may have been because it thought there was no causal relationship between the specified function and the "apparatus purportedly included" in the means clause. 394 F.Supp. at 516. Or it may have been because of the mere omission of the words "in conjunction with the automatic reset function," which is more strongly suggested on p. 517.⁷

In either event, we think the court was in error.

Both clauses 1 and 2 of claim 19, for example, refer to a register-selection section, and clause 2 of the claim provides that the different successively occurring register selection voltage combinations are to be "representative respectively of said registers." Clause 2 also provides a "means for" producing such "voltage combinations representative respectively of said registers."

Referring back to the first part of this opinion in which the problem to be solved, as acknowledged by all, was shown to be position volatility, we think the invention would not work in the manner conceived by the inventor if it were position volatile. This is so because the voltage combinations would not be representative respectively of the registers at each necessary place in the system in an apparatus which was position volatile. The voltage com-

⁷ If it be thought that the reason the district court held against the claim was because it thought the claim did not include a function, we think that it did as explained in the body of the opinion.

Needless to say, the decision of the district court on claims 5 and 23 will have to be reconsidered in the light of this opinion.

binations in such a position volatile apparatus might well be not so representative after power failure or cutoff as we have before described.

Considering that clause 2 of claim 19 is in one of the permissible forms of claiming under paragraph 3 of § 112, since it expresses a "means or step for performing a specified function," we think the specified function is the production and transmission to necessary places in the system of voltage combinations "representative respectively of said registers" and not of something else. That being true, it is not necessary that the claim recite a "structure, material, or acts in support thereof," for it "shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." § 112, paragraph 3.

The clock disk and reset feature is mentioned at various places throughout the specifications, but for our present purpose we need mention only one. Column 4, line 33, contains the following language:

"The one pulse per revolution output supplied from the clock disk 1 through amplifier *a*1 is used to initially set the counters so that the registers on the disks will always remain the same relation with the pulses on the clock disk as checked by counters *b* and *c*, even though the power be shut off and later turned on with the counters coming up containing arbitrary counts."

Thus, by reference to the specifications in accordance with paragraph 3 of § 112, we think the clock disk and its function, which amounts to the reset feature, is covered as a corresponding structure or act as a part of the claim and helps serve to prevent invalidity for indefiniteness. See opinion of the Patent Commissioner, 164 USPQ at 55-56. We think our construction of the language used is consistent with *Continental Paper Bag Company* (the claims

measure the invention); with *Lundberg* (we have not diminished the effect of the second paragraph by reference to the third paragraph of § 112); with *Knowlton* (in permissible claiming, we have construed the language of the claim as directed by the third paragraph of § 112); and with *Stearns* (the structure is recited in the specifications, although it need not as well be in the claim).

We are therefore of opinion that the district court erroneously construed the claims for the reasons set forth just above, as well as those in Part I of this opinion.

III

The order of the district court adjudging claims 1-24 inclusive of the '813 patent to be invalid must be vacated and the case remanded for further proceedings not inconsistent with this opinion.

Vacated and Remanded.

for a particular flight. The total number of seats available is stored in a register (a length of magnetic tape or a sector of a magnetic disc) and the number of confirmed reservations is also recorded. If an outside station desires to make reservations, data as to the number and flight are communicated to the centrally located storage unit. The appropriate storage register is selected, and the number of additional reservations desired is added to the previous total. If the sum of these is less than the number of available reservations, the two are added to provide a new total which is then stored back in the corresponding storage register where the new total is then available for similar access in the future; and the inquiring station is so notified. If the requested additional reservation, added to the reservations already made, would exceed the total of reservations available, the application is rejected, the inquirer is so notified and the old number remains unchanged.²

All this involves a process of register selection; that is, it is necessary to locate a particular register later, and perhaps several times, in order that the previously stored information content may be accessed for a desired use. Until January 7-9, 1948 the proposed system, once it had started operation, permitted such accurate location of register(s) as long as it continued operation without interruption. However, if there were an interruption, such as by a power failure, "position volatility" may occur.

As Commissioner Davis very clearly explained (164 USPQ at 52-53):

A particular aspect of the invention, significant to the license dispute here in issue, relates to the so-called memory reset feature by which position volatility of the system is avoided. To explain, on the common shaft with the information disks is a master or

clock disk which has recorded around its face two channels of magnetic pulses—one channel has 160 evenly-spaced pulses, the other 1 pulse. The purpose of the clock disk, as its name implies, is to serve as a timing device to coordinate the timed-position of the information disks with other elements and circuits of the computer system. A pickup head is located over each channel. Thus, one head produces 160 evenly-timed pulses per revolution of the clock disk, the other one pulse per revolution. The 160-pulsehead is connected to a scale-of-ten electronic counter which produces one output signal for each 10 input pulses. Thus, the counter generates 16 pulses (160/10) for each revolution of the clock disk, and it thereby divides the information disks (on a common shaft with the clock disk) into 16 10-pulse registers, or information segments. Pulses from the scale-of-ten counter are applied through electronic circuitry to a digital counter which in turn produces 16 unique voltage combinations, each thus representative of one register on an information disk. When one of the voltage combinations matches up with, or coincides with, a similar combination from a remote station (generated by an operator seeking information about a particular flight, or register), circuitry is activated by which the register is used.

It can be seen from the above that it is essential for the clock disk and the scale-of-ten counter to stay in synchronization. Otherwise, the counter will not produce signals representative of each register; or, to say it another way, the system would be position volatile. During normal operation, with power on and the equipment functioning properly, the clock disk and counter will stay synchronized. However, at startup initially, or after a power failure, the clock disk and counter may lose synchronization, e. g., if the clock disk continues rotation momentarily through inertia after

² This "store-if-no-exceed" feature was added in March 1948.

electric power is cut off the counter and the motor. Also, when power is cut off, the counter, a purely electronic device, loses count; and on restart, its counts may not be synchronized with the start of a register on an information disk so that such counts would be arbitrary with respect to register positions. Thus, some means must be provided to synchronize the clock disk and counter on startup. The one pulse per revolution channel on the clock disk serves that purpose. It is connected through appropriate circuitry to reset the counters to zero after each revolution of the clock disk, thereby synchronizing the clock disk and counter if they are out of synchronization.

This automatic reset figure was Eichert's direct contribution to the system, developed by him January 7-9, 1948.³ It is briefly described in the specification Col. 4, lines 33-40):

"The one pulse per revolution output supplied from the clock disk 1 through amplifier *a*₁ is used to initially set the counters so that the registers on the disks will always maintain the same relation with the pulses on the clock disk as checked by counters *b* and *c*, even though the power be shut off and later turned on with the counters coming up containing arbitrary counts."

Frequent other references to "reset" occur in the specification, e. g., Column 4, lines 62 and 65; Column 5, line 41; Column 10, lines 5, 6, 14, 19, 22, 64 and Column 13, line 61. Nevertheless, the clock disk and assorted counters "are not expressly recited in any of the claims" (164 USPQ at 53) and Plaintiff so "concedes" 164 USPQ at 55); but

³ Until then Eichert appears only to have made some suggestions as to Sharpless' drawings. Who is primarily responsible for the "store-if-no-exceed" feature is not clear, but it is not important for the disposition of the pending motion.

Commissioner Davis held that they were included in claims 1-15 and 17-24 "in broad 'means' clauses" (164 USPQ at 53).

The significance of the automatic reset feature was stressed by Commissioner Davis in that it was only with the reset feature that *the* invention claimed in claims 1-15 and 17-24 occurred. 164 USPQ at 56:

The record is clear that while Sharpless did considerable preliminary design work on the reservations system in mid-1947, it was not until early 1948, when working full time for Technitrol, that the problem of position volatility was recognized and solved by Eichert. Only then was there a complete system, as envisioned by the inventors and later disclosed in their patent application. Defendant makes much of the fact that a position volatile system is nevertheless operable in a legal sense because the problem of position volatility only arises at initial startup and startup after a power failure. Thus, defendant reasons, there was conception of the invention in suit before the position volatility problem was recognized and solved. In our view, however, while there may have been conception of *an* invention before Eichert came on the scene, it was not *the* invention disclosed and claimed in claims 1-15 and 17-24 of the patent in suit. The Sharpless and Eichert invention included the memory reset feature and it is *that* invention with which we are here concerned"

Plaintiff concurs in this conclusion. In its statement of "Position" it says (page 9):

"... The memory synchronization solution feature for register selection is claimed in claims 1-15 and 17-24"

Further, in "Plaintiff's Brief Opposing Defendant's Brief in Support of its Exceptions to the Commissioner's Report," filed July 2, 1970, Plaintiff stated:

. . . Thus, the Commissioner's construction of the representative claims 23 and 5, directed to different aspects of the inventory control problem, substantially narrowed the scope of these two representative claims by incorporating into them the memory synchronization feature on the magnetic data storage invention defined by representative claim 19.

*After studying the legal basis for the Commissioner's narrowing construction of the representative claims 23 and 5, plaintiff has acquiesced.**

The result is that there are two independent and distinct inventions involved; the claim 19 invention and the claim 16 invention

This mandatory inclusion of the automatic reset feature was necessary, so that Plaintiff could avoid a free license to the United States, since apparently the reset feature⁴ is the only portion of the Sharpless-Eichert '813 patent disclosure occurring after Sharpless left the employ of the Government's contractor, under which employment the Government would be entitled to a royalty-free license.

With this background, Commissioner Davis held that "the" invention, "including the memory reset feature" was conceived after and outside of the employment of Sharpless by the Government's contractor. The full Court of Claims held that the United States "is fully licensed under claim 16, and is also licensed under all other claims

* As a practical matter, this means plaintiff's present position is that inventory control claims such as claim 23 and 5 cannot be infringed unless magnetic data storage invention claims such as claim 19 are also infringed. [Emphasis added by Defendant].

⁴ And possibly the "store-if-no-exceed" feature.

of the Sharpless except to the extent that those other claims may be limited to the system's automatic reset feature explained below. We leave to later proceedings the determination of whether the three representative claims other than 16 (5, 19, 23) embrace the automatic reset feature, and if so, whether those claims (and the patent) as so construed are valid" (440 F.2d at 1364).

The court has been advised that on the basis of the holdings of Commissioner Davis and of the Court of Claims that the Government would be liable for infringement of claims involving the automatic reset feature, the Government has paid Plaintiff a substantial sum in settlement.

Defendants have filed a motion for summary judgment holding claims 1-15 and 17-24 invalid under the second paragraph of 35 U.S.C. § 112 requiring that:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Defendants contend that it was only when confronted with a licensing problem in the Court of Claims that Plaintiff took the position that the reset feature was asserted as vital to claims 1-15 and 17-24; and that had this been previously disclosed (as, it is argued, should have been done in the claims) it would have been easy to "design around" the reset feature. Defendants further argue that the reset feature is not essential to the functioning of Plaintiff's invention; and that if "reset" is required it can be effected mechanically, apart from Plaintiff's specification.

Particularly is the question of claim coverage of the reset feature important, since it is the only direct contribution of the so-called co-inventor Eichert (other than perhaps the "store-if-no-exceed" feature) and so a real

question would be presented as to whether or not Sharpless and Eichert were co-inventors.

Defendants further point out that if the reset feature is, as Plaintiff asserts, "vital" to the validity of claims 1-15 and 17-24, then the earliest date of the invention is January 1948, which lets in the '827 patent, which patent Defendants assert (and are supported by their expert) teaches a system entirely responsive to the register selection recital of the claims of '813 patent in suit, but the '827 patent does not have a reset feature.

Defendants rely upon the well-established principle that "the claims made in the patent are the sole measure of the grant" *Aro Manufacturing Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 339, 81 S.Ct. 599, 601, 5 L.Ed.2d 592 (1960); that the specification and drawings are simply exemplary; the true measure of the invention is defined by the claims. *Reeves Instrument Corp. v. Beckman Instruments Inc.*, 444 F.2d 263, 274 (9 Cir. 1971); *White v. Dunbar*, 119 U.S. 47, 51, 7 S.Ct. 72, 30 L.Ed. 303 (1886);⁵ *Altoona Publix Theatres, Inc. v. American Tri-Ergon Corp.*, 294 U.S. 477, 55 S.Ct. 455, 79 L.Ed. 1005 (1934); *Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U.S. 405, 409, 28 S.Ct. 748, 52 L.Ed. 1122 (1908); *General Electric Co. v. Wabash Appliance Corp.*, 304 U.S. 364, 58 S.Ct. 899, 82 L.Ed. 1402 (1937).

As stated in *Waldon, Inc. v. Alexander Mfg. Co.*, 161 USPQ 404 (S.D. Miss. 1969):

"Any important aspect which is deemed important to an invention which is sought to be protected by a patent should be stated with such specificity as to afford a notice and warning to the public of its importance to the device as a protected portion of the patent. Vague generalities and nebulous and obscured phrases in the

⁵ The famous "nose of wax" case.

claim should never be extended by judicial construction."

Plaintiff relies on 35 U.S.C. § 112, paragraph 3 as a basis for finding the automatic reset feature in claims 1-15 and 17-24. That paragraph provides that:

"An element in a claim for a combination may be expressed as a means or step for performing a *specified function* without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the *corresponding structure*, material, or acts *described in the specification* and equivalents thereof." [Emphasis supplied].

That the requirement of the second paragraph of Section 112 that the claim(s) particularly point out and distinctly claim the subject matter that the applicant regards as his invention has not been diminished by the third paragraph has been expressly held. Application of *Lundberg*, 244 F.2d 543, 547-548 (C.C.P.A.1957):

"The third paragraph of 35 U.S.C. § 112 made its initial appearance in the Patent Act of 1952. As correctly stated by appellants in their brief, this paragraph was designed, at least in part, to modify or overrule such decisions as *Halliburton Oil Well Cementing Co. v. Walker*, 1946, 329 U.S. 1, 67 S.Ct. 6, 10, 91 L.Ed. 3, and, as pointed out by an augmented Board of Appeals in *Ex parte Ball & Hair*, 99 USPQ 146 (Bd.App. 1953), "• • • some measure of greater liberality in the use of functional expressions in the definition of elements in proper combination claims is authorized by section 112, than has been permitted by some of the stricter decisions of the courts in the past." This 'measure of greater liberality.' however, is subject to well defined limitations for Congress did not intend by incorporating the third paragraph into section 112, to

destroy certain basic precepts of patent law. Thus, though appellants' arguments would necessarily lead to the opposite conclusion, it is still true that 'the claim is the measure of the invention.' The requirement in the second paragraph of section 112 that 'the specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention' has not been at all diminished by the addition of the third paragraph; the latter paragraph must be read in the light of the first and second paragraphs and given an interpretation consistent with their clear meaning" [Footnotes omitted].

The Patent Office Board of Appeals has also held that means plus function claims cover only the structure necessary to perform the specified function. *Ex parte Birnbaum*, 161 USPQ 635 (1968).

Defendants vigorously and plausibly argue that the second paragraph of 35 U.S.C. § 112 requires a necessary or causal relationship between the "specified function" and apparatus purportedly included in such a "means" plus "specified function" claim recitation. Plaintiff's contention that there is no requirement of any "causal relationship" when the "statutory means for performing a specified function . . ." is used "because the function is all that is required to be specified and if, as here, that function is definite, that is sufficient to comply with 35 U.S.C. [§] 112 in its entirety,"⁶ is unsound.

The court suggests, and finds, that this is a logical fallacy if there is no "causal relationship." Otherwise, there would be no way for the public (or a court) reasonably to assess the asserted or valid, scope of the claim language.

⁶ Plaintiff's "Response Under Protest to Defendants' Motion for Summary Judgment in Claims 1-15 and 17-24 on the Ground of Claim Indefiniteness," p. 8.

Plaintiff further asserts⁷ that "'Register selection' is a definite function so that claims 1-15 and 17-24 which recite the 'register selection' function are clearly definite."

If the claims reciting "register selection" had said, as they easily might (and should, and probably would, if that were intended) "in conjunction with the automatic reset function" there would be no room for argument that Plaintiff was right. The absence of such a recital, in the claims, or such an assertion in the prosecution in the Patent Office, militates strongly against such an interpolation.

With respect to Plaintiff's contention that the claims 1-15 and 17-24 do, and claim 16 does not, embody the "vital" automatic reset feature, it is necessary to consider the exact language of "representative" claims 5, 16, 19 and 23.⁸

Claim 5

"In an information storage system,

1. a central station,
2. a plurality of operating stations,
3. a transmission line extending from each of said operating stations to said central station,
4. a plurality of operating positions at each of said operating stations,
5. a plurality of registers at said central station adapted to receive numerical information and to have such information erased therefrom,

⁷ *Ibid.* p. 8.

⁸ 440 F.2d at 1363, fn. 1. The numbered breakdown of the claims made by Plaintiff in its "Statement of Position . . ." is adopted. For reasons which it is hoped will be readily apparent, claim 16 is quoted last.

6. means under control of an operator at any one of said positions at any one of said stations for producing and sending over the line of said station a group of pulses indicative of a particular register and also containing numerical information which it is desired to store in that register,
7. means for preventing transmissions over the lines of the other stations during the operation at said one station,
8. means for preventing operations at the other positions of said one station during the operation at said one position,
9. means at said central station responsive to said pulses for selecting said register,
10. means operable upon selection of said register for indicating at said one position whether or not any number already stored in said register plus that to be stored exceeds a given number,
11. and means operable only in the event that said given number will not be exceeded for erasing the number already in said register and for storing therein the sum of the erased number and the additional number which it is desired to store."

Claim 19

"In an information storage system,

1. magnetic recording means having a plurality of information recording sections constituting registers and also having a register-selection section on which are recorded pulses coordinated with said registers,
2. means for producing from said recorded pulses different successively-occurring register-selection voltage combinations representative respectively of said registers,

3. means under control of an operator at a remote position for producing a group of pulses indicative of a particular register and also containing numerical information which it is desired to store in that register,
4. means responsive to some of said pulses for producing a pattern of voltages,
5. means responsive coincidentally to said voltage combinations and said voltage pattern for selecting said register,
6. and means for storing said numerical information in said register."

Claim 23

"In an information storage system,

1. spot magnetization recording means including a plurality of registers adapted to receive numerical information and to have such information erased therefrom,
2. manually settable keyboard means at a remote position,
3. means operable cooperatively with said keyboard means to produce a group of pulses indicative of a particular register and also containing numerical information which it is desired to store in that register,
4. means responsible to said pulses for selecting said register,
5. means operable upon selection of said register for indicating whether or not any number already stored in said register plus that to be stored exceeds a given number,
6. and means operable only in the event that said given number will not be exceeded for erasing the

number already in said register and for storing therein by spot magnetization the sum of the erased number and the additional number which it is desired to store."

Claim 16

"A system for magnetic storage of a plurality of data respectively relating to different items of information,

1. comprising a magnetic member having a plurality of magnetizable data storage portions respectively assignable to said different items of information,
2. a magnetic recording and reading device adjacent to said magnetic storage member for selectively magnetizing any of said data storage portions for storing data thereon or alternatively for taking a reading of data previously stored thereon,
3. means for transmitting signals including item selection signals to said storage apparatus,
4. means for causing continuous relative rotation between said magnetic storage member and said magnetic recording and reading device for continuously scanning said plurality of data storage portions,
5. circuits separately operable through said magnetic recording and reading device for causing the device to record or read as desired,
6. selective means responsive to the received signals for rendering a desired one of said circuits operable,
7. and means including a gating circuit having space discharge tubes and whose timing is controlled by the received selection signals and the instantaneous position of said recording and reading device relative to

that of a data storage portion selected, thereby to effect a desired recording or reading operation."⁹

Plaintiff contends that the automatic reset feature is incorporated in claims 5, 19 and 23 by the "means" provisions of the following clauses:

Claim 5, clause 9:

"means at said central station responsive to said pulses for selecting said register"

Claim 19, clause 5:

"means responsive coincidentally to said voltage combinations and said voltage pattern for selecting said register"

Claim 23, clause 4:

"means responsive to said pulses for selecting said register"

It is the "means" for "selecting said register" that are called for by each of said claims, and it is the "pulses" (Claims 5 and 23) or "voltage combinations and said voltage pattern for selecting said register" (Claim 19) that constitute those "means." Certainly no warning is given that these "means" involve or incorporate an automatic reset feature, any more than that they include keys, transmission and power lines, or signal lights. Such is also the

⁹"The read-record timing invention was originally claimed in the application of Edwin L. Schmidt, filed May 5, 1948 and issued on February 26, 1952, as U.S. Patent No. 2,587,532 to The Tele-register Corporation, for a System for Magnetic Storage of Data. The read-record timing invention was the subject of an interference in the U.S. Patent Office between the Sharpless-Eichert patent application and the Schmidt patent application, and priority was awarded to Sharpless-Eichert" (Plaintiff's Position p. 11).

uncontroverted testimony of Defendants' expert, Dr. McDuffie.¹⁰

Now compare the language of claim 16, which Plaintiff contends does not include the automatic reset feature, which Commissioner Davis says "may not" be included¹¹ and which was stated by the Court of Claims "was found by the commissioner and is agreed by the parties to be entirely independent of the reset device"¹²

"2. a magnetic recording and reading device . . . for selectively magnetizing any of said data storage positions . . . alternatively for taking a reading of data previously stored thereon."

"5. circuits . . . for causing the device to . . . read as desired."

"6. selective means responsive to the received signals for rendering a desired one of said circuits operable."

If these do not relate to "register selection" the court's understanding of English is abysmally deficient. If these "means" do not include the automatic reset feature (as they do not in terms, and as Plaintiff asserts they do not) then it is difficult, if not impossible, to understand how representative claims 5, 19 and 23 do include such feature under the "means" language. "Means" apparently "means" only what Plaintiff "means" it to.

Some almost startling results follow.

If claim 16 does not incorporate the automatic reset feature under the "means" approach, claim 16 does not claim a "vital" element of "the" invention and accordingly is invalid.

¹⁰ Attachment 7 to Defendants' Supporting Statement for Summary Judgment Motion, pars. 5, 6, 43-47.

¹¹ 164 USPQ 57, fn. 7.

¹² 440 F.2d at 1375.

If claim 16 does not incorporate the automatic reset feature under the "means" approach, but nevertheless is valid, then the automatic reset feature is not "vital" to the validity of the patent.

If claim 16 does in fact incorporate the automatic reset feature, despite Plaintiff's denial thereof, then it is impossible to give any intelligent interpretation to the claims of the patent.

If even the Plaintiff does not know what the claims mean, how can any businessman (or judge) find that they particularly point out and distinctly claim "the subject matter which the applicant regards as his invention"? (35 U.S.C. § 112, par. 2).

In view of the foregoing, the court finds and holds that, because of Plaintiff's position as to the scope of the '813 patent and its "vital" elements, claims 1-15 and 17-24 are invalid, as not "particularly pointing out and distinctly claiming the subject matter which the applicant claims as his invention." (35 U.S.C. § 112, par. 2). Defendants' motion for summary judgment as to those claims is accordingly granted. For the reasons set forth above, the court *sua sponte* likewise grants summary judgment for the Defendants as to claim 16.

It thus becomes unnecessary to discuss the other contentions raised by Defendants, such as:

1. The automatic reset feature is useful only on initial start-up or in the event of a power failure; it is not necessary during continual operation.¹³

2. Other operational computers without reset features, such as ENIAC, EDVAC, UNIVAC and BINAC, were

¹³ McDuffie Affidavit, Attachment 7 to Defendants' Supporting Statement for Summary Judgment Motion, pars. 6-9, 32-33, 36-37.

information and/or position volatile but these information-volatile devices were successfully used.¹⁴

3. With the January 1948 date for the '813 invention, the earliest possible if the automatic reset "vital" feature is accepted, '813 reads directly on the Eichert-Mauchly '827 patent which does not include a reset feature.¹⁵

4. That the register selection language of the '813 patent is sufficiently broad so that it would encompass equivalent systems directly driven from the revolving shaft of a mechanical system incapable of losing synchronization in the event of power failure.¹⁶

Judgment is hereby directed to be entered to the effect that claims 1-24 of the '813 patent are invalid.

¹⁴ Plaintiff's expert, Shaw, Court of Claims Transcript 3132-34.

¹⁵ McDuffie Affidavit, supra, pars. 39-42.

¹⁶ McDuffie Affidavit, supra, pars. 46-56.

Certificate of Service

Three copies of the foregoing Appendix have been served under Rule 33 of this Court upon Mr. S. C. Yuter and Mr. Paul V. Niemeyer, attorneys for Respondent Technitrol, Inc. by depositing same in a United States mail box, first class mail addressed to their post office addresses of record.

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